Appl. No. 10/036,032
Amdt. Dated February 26, 2007
Reply to Office Action of August 25, 2006

REMARKS/ARGUMENTS

Claims 1-20 of the present application have been rejected by the Examiner. Claims 1-4 and 20 have also been objected to by the Examiner. Claims 1 has been amended in view of the objections of the Examiner and claims 1, 2 and 4 have been amended in order to more distinctly claim the subject matter of the applicants' invention. In order to facilitate the proseeeution of this application and to focus the remarks on the distinguishing characteristics of the present invention, applicants have cancelled claims 5 through 20. Claims 1-4 remain in the application.

Claims 1 and 2 have been rejected under 35 U.S.C. §102(e) as being anticipated by United States Patent No. 4,864,559 to Perlman ("Perlman"). Claims 5-10 have been rejected by the Examiner under 35 U.S.C. § 102(e) as being anticipated by United States Patent No. 5,517,494 to Green ("Green"). Claims 11-17 have been rejected under 35 U.S.C. § 102(e) as being anticipated by United States Patent No. 6,141,347 to Shaughnessy et al. ("Shaughnessy"). Claim 3 has been rejected under 35 U.S.C. § 103(a) as being obvious over Perlman in view of Shaughnessy. Claim 4 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Perlman, in view of United States Patent No. 5,361,256 to Doeringer. Lastly, claims 18 and 19 have been rejected under 35 U.S.C. § 103(a) as being obvious over Shaughnessy in view of Green. However, while applicants believe that applicants' invention is patentably distinct from each of the cited references, to try and focus the discussion on the essential differences, applicants have cancelled claims 5 through 19 and will focus our remarks on claims 1-4 and 20 in light of Perlman

With respect to claim 1 the Examiner states that all steps of the claim are taught by Perlman. Applicants recognize that the Examiner was not persuaded by the previous arguments. However, applicants respectfully submit that the Examiner has erroneously equated elements of applicants claimed invention with cited elements in the Perlman disclosure. Perlman discloses a two level hierarchical fixed network wherein Nodes at the lowest level (L1) communicate only with other L1 nodes in the same area and can only communicate with nodes in the higher level (L2) that are also in the same area. Applicants teach and disclose an multilevel hieararchical network topology. Further, the Examiner states that Perlman discloses a multicast range that can be a link, an area or an entire network. Applicants teach and disclose scope uniquely identified as levels within the network topology. A portion of the network defined as an "area" by Perlman appears to be an arbitrary set of routers in two different hierarchical levels. The Examiner also asserts that Perlman disclosed the step of identifying a root identifier for the scope region

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comprising the subnet. The Examiner cites to Column 10, lines 20 and 21 and lines 46-49 as teaching the root identifier. The cited references just refer to the initial domain and local area address. This is not the same as the hierarchical routing system identified by a root identifier and a scope region as claimed by the applicants in their amended claims. None of the level 2 nodes (121-127 in FIG. 1 of Perlman) are designated as a root identifier for their respective "areas." In the present invention the root identifier and scope region define the subnet within the hierarchy to which multicast packets will be distributed. Because Perlman does not teach or suggest the identification of a group of nodes through the use of scope region and root identifier there is no teaching or suggestion of forwarding packets of data from said source to the routers in the network wherein said packets of data contain data fields identifying the scope region and the root identifier of the scope region.

The Examiner points to column 10, lines 18-26 and claim 1 of Perlman as teaching that the message format contains these features. A close reading of Perlman shows that the multicast message format in FIG. 5 that is discussed in column 10 contains only a "LOC-AREA" field 550. The "LOC-AREA" field 550 may have the following values: "if the local area field 550 equals zero then the multicast range is equal to a single link. If the local area 550 equals all ones, then the multicast range is the entire network. All other multicast messages will be distributed to the area specified in the local area field 550." (Perlman, column 10, lines 58-68). There is no discussion as to how the local area is actually identified. Thus, even if the local area were taken to be equivalent to a subnet having a root identifier which applicants do not believe is true, there is no teaching or suggestion in Perlman that the scope region and root identifier that identify a subnet are used in forwarding packets of data from said source to the routers in the subnet wherein said packets of data contain data fields identifying the scope region and the root identifier of the scope region of the subnet.

Claim 2 is neither taught nor suggested by Perlman. Claim 2 adds the additional steps of identifying each router in a subnet bounded by the scope region that can send packets of data to or from a router at a higher or lower level as a hierarchical designated router (HDR) and identifying the root identifier for the scope region as the hierarchical designated router directly above the scope region. Perlman neither teaches nor suggests these steps because there is no teaching in Perlman of a root identifier for a subnet. Thus, there is no discussion of a hierarchical designated router. In Perlman any router at level 2 can communicate with any other router at level 2 to which it is connected. There is no designation for an "area" of a root identifier or the notion of an

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HDR. That is because the areas in Perlman are not hierarchically organized subnets that could be identified by a root identifier and a scope range as in the present invention.
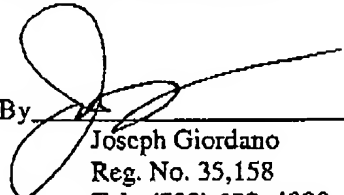
Claim 4 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Perlman, in view of United States Patent No. 5,361,256 to Doeringer. Claim 4 further comprises, prior to the forwarding step, the steps of receiving a packet of data at a router in the network; determining whether the router is within the scope region specified in the data field identifying the scope region for the packet of data; and, discarding the data packet if the router is outside the scope region. There is no teaching or suggestion of a scope region that defines the levels of a subnet for multicasting purposes in Perlman and Doeringer does not overcome this and other deficiencies in Doeringer. Doeringer does discuss the discarding of packets that do not lie on the branch of a multicast tree that leads to any members of that group. This is different than the present invention in that a multicast tree must be developed in some way and information about the members of the tree must be distributed. In the present invention there is no multicast tree. The members of a multicast group are identified by a scope region and root identifier that are neither taught nor suggested by Perlman or Doeringer, alone or in combination.

Applicant hereby requests reconsideration of claims 1-4, in view of the above amendments and discussion, and allowance thereof is respectfully requested.

A three-month extension of time is hereby respectfully requested.

Respectfully submitted,

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